

BCS 04-501-PCT_SEQUENZPROTOKOLL_Verfahren zur Identifizierung.ST25
SEQUENCE LISTING

<110> Bayer CropScience GmbH

<120> Methods for identifying proteins with starch phosphorylating enzymatic activity

<130> BCS 04-5001-PCT

<150> EP04090483.1

<151> 2004-12-15

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<151> 2004-03-05

<150> US60/549,980 provisional

<151> 2004-03-05

<160> 26

<170> PatentIn version 3.1

<210> 1

<211> 3591

<212> DNA

<213> Arabidopsis thaliana

<220>

<221> CDS

<222> (1)..(3591)

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act	aga	aac	tca	tca	tca	tca	ctt	cct	aga	ctc	gtt	aac	atc	act	cac		96
Thr	Arg	Asn	Ser	Ser	Ser	Ser	Leu	Pro	Arg	Leu	Val	Asn	Ile	Thr	His		
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aga	gtt	aat	ctc	agc	cac	caa	tct	cac	cga	ctc	aga	aac	tcc	aat	tct		144
Arg	Val	Asn	Leu	Ser	His	Gln	Ser	His	Arg	Leu	Arg	Asn	Ser	Asn	Ser		
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cgt	ctc	act	tgc	act	gct	act	tct	tct	tcc	acc	att	gag	gaa	caa	cgg		192
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Arg	Asn	Ser	Lys	Asn	Trp	Trp	Arg	Lys	Leu	Glu	Met	Val	Arg	Glu	Val		

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tct Ser	gca Ala 290	att Ile	tat Tyr	ttg Leu	aag Lys	tgg Trp 295	ata Ile	aac Asn	aca Thr	ggt Gly	cag Gln 300	att Ile	cct Pro	tgt Cys	ttt Phe	912
gaa Glu 305	gat Asp	gga Gly	ggg Gly	cat His	cac His 310	cgt Arg	cca Pro	aac Asn	agg Arg	cat His 315	gcc Ala	gag Glu	att Ile	tcc Ser	aga Arg 320	960
ctt Leu	ata Ile	ttc Phe	cgt Arg	gag Glu 325	ttg Leu	gag Glu	cac His	att Ile	tgc Cys 330	agt Ser	aag Lys	aaa Lys	gat Asp	gct Ala 335	act Thr	1008
cca Pro	gag Glu	gaa Glu	gtg Val 340	ctt Leu	gtt Val	gct Ala	cgg Arg	aaa Lys 345	atc Ile	cat His	ccg Pro	tgt Cys	tta Leu 350	cct Pro	tct Ser	1056
ttc Phe	aaa Lys	gca Ala 355	gag Glu	ttt Phe	act Thr	gca Ala	gct Ala 360	gtc Val	cct Pro	cta Leu	act Thr	cgg Arg 365	att Ile	agg Arg	gac Asp	1104
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cga Arg 785	ctt Leu	gtg Val	gga Gly	aaa Lys	ttt Phe 790	gtg Val	agg Arg	ttg Leu	gaa Glu	gca Ala 795	tct Ser	cca Pro	agt Ser	cat His	gtg Val 800	2400
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850 855 860	
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Ile Ile Ala Leu Ala Asp Ala Asp Val Pro Thr Ser Gly Ser Lys Ser	
865 870 875 880	
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885 890 895	
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Glu Glu Lys Phe Ala Ser Leu Leu Glu Lys Leu Glu Thr Ala Arg Pro	
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Lys Thr Leu Gln Val Pro Lys Glu Thr Ile Asn Ser Ile Ser Lys Ala	
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ttt ctc aaa gat gct cgt ctc att gtt cgt tca agt gct aac gtc gag	2976
Phe Leu Lys Asp Ala Arg Leu Ile Val Arg Ser Ser Ala Asn Val Glu	
980 985 990	
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Gln Glu Met Leu Ser Pro Asp Leu Ser Phe Val Leu His Thr Val	
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agt cca gct gat ccg gac agt aac ctt gtg gaa gcc gag atc gct	3249
Ser Pro Ala Asp Pro Asp Ser Asn Leu Val Glu Ala Glu Ile Ala	

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gct Ala	ttc Phe 1115	gca Ala	aac Asn	ttc Phe	agc Ser	gaa Glu 1120	gag Glu	ctt Leu	ctt Leu	gtg Val	tca Ser 1125	gga Gly	aca Thr	ggt Gly	3384
cct Pro	gct Ala 1130	gat Asp	gga Gly	aaa Lys	tac Tyr	gtt Val 1135	cgg Arg	ttg Leu	acc Thr	gtg Val	gac Asp 1140	tat Tyr	agc Ser	aaa Lys	3429
aaa Lys	cgt Arg 1145	tta Leu	act Thr	gtt Val	gac Asp	tcg Ser 1150	gtg Val	ttt Phe	aga Arg	cag Gln	cag Gln 1155	ctc Leu	ggt Gly	cag Gln	3474
aga Arg	ctc Leu 1160	ggt Gly	tcg Ser	gtt Val	ggt Gly	ttc Phe 1165	ttc Phe	ttg Leu	gaa Glu	aga Arg	aac Asn 1170	ttt Phe	ggc Gly	tgt Cys	3519
gct Ala	caa Gln 1175	gac Asp	gtt Val	gaa Glu	ggt Gly	tgt Cys 1180	ttg Leu	gtt Val	ggt Gly	gaa Glu	gat Asp 1185	gtt Val	tac Tyr	att Ile	3564
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35 40 45

Arg Leu Thr Cys Thr Ala Thr Ser Ser Ser Thr Ile Glu Glu Gln Arg
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Lys Lys Lys Asp Gly Ser Gly Thr Lys Val Arg Leu Asn Val Arg Leu
65 70 75 80

Asp His Gln Val Asn Phe Gly Asp His Val Ala Met Phe Gly Ser Ala

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Lys Glu Ile Gly Ser Trp Lys Lys Lys Ser Pro Leu Asn Trp Ser Glu
 100 105 110

Asn Gly Trp Val Cys Glu Leu Glu Leu Asp Gly Gly Gln Val Leu Glu
 115 120 125

Tyr Lys Phe Val Ile Val Lys Asn Asp Gly Ser Leu Ser Trp Glu Ser
 130 135 140

Gly Asp Asn Arg Val Leu Lys Val Pro Asn Ser Gly Asn Phe Ser Val
 145 150 155 160

Val Cys His Trp Asp Ala Thr Arg Glu Thr Leu Asp Leu Pro Gln Glu
 165 170 175

Val Gly Asn Asp Asp Asp Val Gly Asp Gly Gly His Glu Arg Asp Asn
 180 185 190

His Asp Val Gly Asp Asp Arg Val Val Gly Ser Glu Asn Gly Ala Gln
 195 200 205

Leu Gln Lys Ser Thr Leu Gly Gly Gln Trp Gln Gly Lys Asp Ala Ser
 210 215 220

Phe Met Arg Ser Asn Asp His Gly Asn Arg Glu Val Gly Arg Asn Trp
 225 230 235 240

Asp Thr Ser Gly Leu Glu Gly Thr Ala Leu Lys Met Val Glu Gly Asp
 245 250 255

Arg Asn Ser Lys Asn Trp Trp Arg Lys Leu Glu Met Val Arg Glu Val
 260 265 270

Ile Val Gly Ser Val Glu Arg Glu Glu Arg Leu Lys Ala Leu Ile Tyr
 275 280 285

Ser Ala Ile Tyr Leu Lys Trp Ile Asn Thr Gly Gln Ile Pro Cys Phe
 290 295 300

Glu Asp Gly Gly His His Arg Pro Asn Arg His Ala Glu Ile Ser Arg
 305 310 315 320

Leu Ile Phe Arg Glu Leu Glu His Ile Cys Ser Lys Lys Asp Ala Thr
 325 330 335

Pro Glu Glu Val Leu Val Ala Arg Lys Ile His Pro Cys Leu Pro Ser
 340 345 350

Phe Lys Ala Glu Phe Thr Ala Ala Val Pro Leu Thr Arg Ile Arg Asp

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Ile Ala His Arg Asn Asp Ile Pro His Asp Leu Lys Gln Glu Ile Lys
 370 375 380

His Thr Ile Gln Asn Lys Leu His Arg Asn Ala Gly Pro Glu Asp Leu
 385 390 395 400

Ile Ala Thr Glu Ala Met Leu Gln Arg Ile Thr Glu Thr Pro Gly Lys
 405 410 415

Tyr Ser Gly Asp Phe Val Glu Gln Phe Lys Ile Phe His Asn Glu Leu
 420 425 430

Lys Asp Phe Phe Asn Ala Gly Ser Leu Thr Glu Gln Leu Asp Ser Met
 435 440 445

Lys Ile Ser Met Asp Asp Arg Gly Leu Ser Ala Leu Asn Leu Phe Phe
 450 455 460

Glu Cys Lys Lys Arg Leu Asp Thr Ser Gly Glu Ser Ser Asn Val Leu
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Glu Leu Ile Lys Thr Met His Ser Leu Ala Ser Leu Arg Glu Thr Ile
 485 490 495

Ile Lys Glu Leu Asn Ser Gly Leu Arg Asn Asp Ala Pro Asp Thr Ala
 500 505 510

Ile Ala Met Arg Gln Lys Trp Arg Leu Cys Glu Ile Gly Leu Glu Asp
 515 520 525

Tyr Phe Phe Val Leu Leu Ser Arg Phe Leu Asn Ala Leu Glu Thr Met
 530 535 540

Gly Gly Ala Asp Gln Leu Ala Lys Asp Val Gly Ser Arg Asn Val Ala
 545 550 555 560

Ser Trp Asn Asp Pro Leu Asp Ala Leu Val Leu Gly Val His Gln Val
 565 570 575

Gly Leu Ser Gly Trp Lys Gln Glu Glu Cys Leu Ala Ile Gly Asn Glu
 580 585 590

Leu Leu Ala Trp Arg Glu Arg Asp Leu Leu Glu Lys Glu Gly Glu Glu
 595 600 605

Asp Gly Lys Thr Ile Trp Ala Met Arg Leu Lys Ala Thr Leu Asp Arg
 610 615 620

Ala Arg Arg Leu Thr Ala Glu Tyr Ser Asp Leu Leu Leu Gln Ile Phe

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 625 630 635 640

Pro Pro Asn Val Glu Ile Leu Gly Lys Ala Leu Gly Ile Pro Glu Asn
 645 650 655

Ser Val Lys Thr Tyr Thr Glu Ala Glu Ile Arg Ala Gly Ile Ile Phe
 660 665 670

Gln Ile Ser Lys Leu Cys Thr Val Leu Leu Lys Ala Val Arg Asn Ser
 675 680 685

Leu Gly Ser Glu Gly Trp Asp Val Val Val Pro Gly Ser Thr Ser Gly
 690 695 700

Thr Leu Val Gln Val Glu Ser Ile Val Pro Gly Ser Leu Pro Ala Thr
 705 710 715 720

Ser Gly Gly Pro Ile Ile Leu Leu Val Asn Lys Ala Asp Gly Asp Glu
 725 730 735

Glu Val Ser Ala Ala Asn Gly Asn Ile Ala Gly Val Met Leu Leu Gln
 740 745 750

Glu Leu Pro His Leu Ser His Leu Gly Val Arg Ala Arg Gln Glu Lys
 755 760 765

Ile Val Phe Val Thr Cys Asp Asp Asp Lys Val Ala Asp Ile Arg
 770 775 780

Arg Leu Val Gly Lys Phe Val Arg Leu Glu Ala Ser Pro Ser His Val
 785 790 795 800

Asn Leu Ile Leu Ser Thr Glu Gly Arg Ser Arg Thr Ser Lys Ser Ser
 805 810 815

Ala Thr Lys Lys Thr Asp Lys Asn Ser Leu Ser Lys Lys Lys Thr Asp
 820 825 830

Lys Lys Ser Leu Ser Ile Asp Asp Glu Glu Ser Lys Pro Gly Ser Ser
 835 840 845

Ser Ser Asn Ser Leu Leu Tyr Ser Ser Lys Asp Ile Pro Ser Gly Gly
 850 855 860

Ile Ile Ala Leu Ala Asp Ala Asp Val Pro Thr Ser Gly Ser Lys Ser
 865 870 875 880

Ala Ala Cys Gly Leu Leu Ala Ser Leu Ala Glu Ala Ser Ser Lys Val
 885 890 895

His Ser Glu His Gly Val Pro Ala Ser Phe Lys Val Pro Thr Gly Val

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Val Ile Pro Phe Gly Ser Met Glu Leu Ala Leu Lys Gln Asn Asn Ser
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Glu Glu Lys Phe Ala Ser Leu Leu Glu Lys Leu Glu Thr Ala Arg Pro
 930 935 940

Glu Gly Gly Glu Leu Asp Asp Ile Cys Asp Gln Ile His Glu Val Met
 945 950 955 960

Lys Thr Leu Gln Val Pro Lys Glu Thr Ile Asn Ser Ile Ser Lys Ala
 965 970 975

Phe Leu Lys Asp Ala Arg Leu Ile Val Arg Ser Ser Ala Asn Val Glu
 980 985 990

Asp Leu Ala Gly Met Ser Ala Ala Gly Leu Tyr Glu Ser Ile Pro Asn
 995 1000 1005

Val Ser Pro Ser Asp Pro Leu Val Phe Ser Asp Ser Val Cys Gln
 1010 1015 1020

Val Trp Ala Ser Leu Tyr Thr Arg Arg Ala Val Leu Ser Arg Arg
 1025 1030 1035

Ala Ala Gly Val Ser Gln Arg Glu Ala Ser Met Ala Val Leu Val
 1040 1045 1050

Gln Glu Met Leu Ser Pro Asp Leu Ser Phe Val Leu His Thr Val
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Ser Pro Ala Asp Pro Asp Ser Asn Leu Val Glu Ala Glu Ile Ala
 1070 1075 1080

Pro Gly Leu Gly Glu Thr Leu Ala Ser Gly Thr Arg Gly Thr Pro
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Trp Arg Leu Ala Ser Gly Lys Leu Asp Gly Ile Val Gln Thr Leu
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Ala Phe Ala Asn Phe Ser Glu Glu Leu Leu Val Ser Gly Thr Gly
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Pro Ala Asp Gly Lys Tyr Val Arg Leu Thr Val Asp Tyr Ser Lys
 1130 1135 1140

Lys Arg Leu Thr Val Asp Ser Val Phe Arg Gln Gln Leu Gly Gln
 1145 1150 1155

Arg Leu Gly Ser Val Gly Phe Phe Leu Glu Arg Asn Phe Gly Cys

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Ala Gln Asp Val Glu Gly Cys Leu Val Gly Glu Asp Val Tyr Ile
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Val Gln Ser Arg Pro Gln Pro Leu
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<222> (13)..(3633)

<223>

<400> 3

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Gly	Gly	Arg	Pro	Arg	Arg	Gly	Leu	Val	Leu	Pro	Pro	Pro	Gly	Val	Gly	
	15					20				25						
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Ala	Gly	Val	Leu	Leu	Arg	Arg	Gly	Ala	Met	Ala	Leu	Pro	Gly	Arg	Arg	
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Gly	Phe	Ala	Cys	Arg	Gly	Arg	Ser	Ala	Ala	Ser	Ala	Ala	Glu	Arg	Thr	
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aag	gag	aaa	aag	aga	aga	gat	tct	tca	aag	cag	cca	ttg	gtg	cat	ctc	243
Lys	Glu	Lys	Lys	Arg	Arg	Asp	Ser	Ser	Lys	Gln	Pro	Leu	Val	His	Leu	
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cag	gtt	tgt	cta	gag	cac	cag	gtt	aag	ttt	ggt	gag	cat	gta	ggc	att	291
Gln	Val	Cys	Leu	Glu	His	Gln	Val	Lys	Phe	Gly	Glu	His	Val	Gly	Ile	
		80					85					90				
atc	ggt	tcc	aca	aag	gag	ctt	ggt	tca	tgg	gag	gag	cag	gtt	gaa	ctg	339
Ile	Gly	Ser	Thr	Lys	Glu	Leu	Gly	Ser	Trp	Glu	Glu	Gln	Val	Glu	Leu	
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Glu	Trp	Thr	Thr	Asn	Gly	Trp	Val	Cys	Gln	Leu	Lys	Leu	Pro	Gly	Glu	
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aca	ctt	gtg	gag	ttt	aaa	ttt	gtt	ata	ttt	ttg	gtg	gga	gga	aaa	gat	435
Thr	Leu	Val	Glu	Phe	Lys	Phe	Val	Ile	Phe	Leu	Val	Gly	Gly	Lys	Asp	
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aaa Lys	ata Ile	tgg Trp	gaa Glu 145	gat Asp	ggt Gly	aat Asn	aac Asn	cgt Arg 150	ggt Val	ggt Val	gag Glu	ctg Leu	ccg Pro 155	aag Lys	gat Asp	483	
ggt Gly	aag Lys	ttt Phe 160	gat Asp	ata Ile	gta Val	tgc Cys	cac His 165	tgg Trp	aat Asn	aga Arg	aca Thr	gaa Glu 170	gag Glu	cca Pro	tta Leu	531	
gaa Glu 175	ctt Leu	tta Leu	gga Gly	aca Thr	cca Pro	aag Lys 180	ttt Phe	gag Glu	ttg Leu	gtc Val	gga Gly 185	gaa Glu	gct Ala	gaa Glu	aag Lys	579	
aat Asn 190	act Thr	ggc Gly	gag Glu	gat Asp	gct Ala 195	tca Ser	gca Ala	tct Ser	gta Val	act Thr 200	ttt Phe	gca Ala	cct Pro	gaa Glu	aaa Lys 205	627	
ggt Val	caa Gln	gat Asp	att Ile	tca Ser 210	ggt Val	ggt Val	gag Glu	aat Asn	ggt Gly 215	gat Asp	cca Pro	gca Ala	cca Pro	gag Glu 220	gcc Ala	675	
gag Glu	tca Ser	agc Ser	aaa Lys 225	ttt Phe	ggt Gly	ggg Gly	caa Gln	tgg Trp 230	caa Gln	gga Gly	agt Ser	aaa Lys	act Thr 235	ggt Val	ttc Phe	723	
atg Met	aga Arg	tca Ser 240	aat Asn	gag Glu	cat His	ctg Leu	aat Asn 245	aag Lys	gag Glu	gct Ala	gat Asp	agg Arg 250	atg Met	tgg Trp	gat Asp	771	
aca Thr	act Thr 255	ggg Gly	ctt Leu	gat Asp	gga Gly	ata Ile 260	gca Ala	ctg Leu	aaa Lys	ctg Leu	gtg Val 265	gag Glu	ggc Gly	gat Asp	aaa Lys	819	
gca Ala 270	tcc Ser	agg Arg	aac Asn	tgg Trp	tgg Trp 275	cgg Arg	aag Lys	tta Leu	gag Glu	ggt Val 280	ggt Val	cgc Arg	ggg Gly	ata Ile	ttg Leu 285	867	
tca Ser	gaa Glu	tct Ser	ttt Phe	gat Asp 290	gac Asp	cag Gln	agt Ser	cgt Arg	ctg Leu 295	ggg Gly	gcc Ala	ctt Leu	gta Val	tac Tyr 300	tca Ser	915	
gct Ala	att Ile	tat Tyr	ctg Leu 305	aag Lys	tgg Trp	att Ile	tat Tyr	aca Thr 310	ggt Gly	cag Gln	ata Ile	tcg Ser	tgc Cys 315	ttt Phe	gaa Glu	963	
gat Asp	ggt Gly	ggc Gly 320	cac His	cat His	cgg Arg	cct Pro	aac Asn 325	aaa Lys	cat His	gct Ala	gag Glu	ata Ile 330	tcg Ser	agg Arg	caa Gln	1011	
ata Ile	ttc Phe 335	cgt Arg	gaa Glu	ctt Leu	gaa Glu	atg Met 340	atg Met	tat Tyr	tat Tyr	ggg Gly	aaa Lys 345	acc Thr	aca Thr	tca Ser	gcc Ala	1059	
aag Lys 350	gat Asp	ggt Val	ctc Leu	gtg Val	att Ile 355	cgc Arg	aaa Lys	att Ile	cat His	ccc Pro 360	ttt Phe	tta Leu	cct Pro	tca Ser	ttt Phe 365	1107	
aag Lys	tca Ser	gag Glu	ttt Phe	aca Thr 370	gcc Ala	tct Ser	gtc Val	cct Pro	cta Leu 375	aca Thr	cga Arg	att Ile	cgt Arg	gat Asp 380	att Ile	1155	
gct Ala	cac His	cgg Arg	aat Asn 385	gac Asp	atc Ile	cca Pro	cat His	gat Asp 390	ctc Leu	aag Lys	caa Gln	gaa Glu	atc Ile 395	aag Lys	cat His	1203	
act Thr	ata Ile	caa Gln 400	aac Asn	aaa Lys	ctt Leu	cat His	cgt Arg 405	aat Asn	gct Ala	gga Gly	cct Pro	gag Glu 410	gat Asp	ctt Leu	att Ile	1251	

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gct Ala 415	aca Thr 415	gaa Glu 415	gtc Val 415	atg Met 415	ctt Leu 420	gct Ala 420	agg Arg 420	att Ile 420	act Thr 425	aag Lys 425	acc Thr 425	cct Pro 425	gga Gly 425	gaa Glu 425	tac Tyr 425	1299
agt Ser 430	gaa Glu 430	aca Thr 430	ttt Phe 430	gtt Val 435	gaa Glu 435	caa Gln 435	ttc Phe 435	acg Thr 435	ata Ile 440	ttt Phe 440	tat Tyr 440	agc Ser 440	gaa Glu 445	cta Leu 445	aaa Lys 445	1347
gat Asp 450	ttc Phe 450	ttc Phe 450	aat Asn 450	gct Ala 450	ggc Gly 455	agc Ser 455	cta Leu 455	ttt Phe 455	gag Glu 455	caa Gln 455	ctg Leu 460	gag Glu 460	tcc Ser 460	atc Ile 460	aag Lys 460	1395
gaa Glu 465	tct Ser 465	ctg Leu 465	aac Asn 465	gag Glu 470	tca Ser 470	ggc Gly 470	tta Leu 470	gaa Glu 470	gtt Val 475	ctc Leu 475	tca Ser 475	tcc Ser 475	ttt Phe 475	gtg Val 475	gaa Glu 475	1443
acc Thr 480	aaa Lys 480	agg Arg 480	agt Ser 480	ttg Leu 485	gac Asp 485	caa Gln 485	gtg Val 485	gat Asp 485	cat His 490	gca Ala 490	gaa Glu 490	gat Asp 490	ttg Leu 490	gat Asp 490	aaa Lys 490	1491
aat Asn 495	gat Asp 495	acc Thr 495	att Ile 495	caa Gln 500	att Ile 500	ttg Leu 500	atg Met 500	act Thr 500	acc Thr 505	ttg Leu 505	caa Gln 505	tca Ser 505	tta Leu 505	tct Ser 505	tct Ser 505	1539
cta Leu 510	aga Arg 510	tcg Ser 510	gtt Val 510	cta Leu 515	atg Met 515	aag Lys 515	ggc Gly 515	ctt Leu 515	gaa Glu 520	agt Ser 520	ggc Gly 520	ctt Leu 520	aga Arg 520	aat Asn 520	gat Asp 525	1587
gcg Ala 530	cct Pro 530	gat Asp 530	aat Asn 530	gct Ala 530	ata Ile 530	gca Ala 535	atg Met 535	cga Arg 535	caa Gln 535	aag Lys 535	tgg Trp 535	cgc Arg 535	ctt Leu 540	tgt Cys 540	gaa Glu 540	1635
att Ile 545	agt Ser 545	ctt Leu 545	gag Glu 545	gat Asp 545	tat Tyr 545	tca Ser 550	ttt Phe 550	gtt Val 550	ctg Leu 550	tta Leu 550	agc Ser 550	aga Arg 550	ttc Phe 555	atc Ile 555	aat Asn 555	1683
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aga Arg 575	aat Asn 575	act Thr 575	act Thr 575	cta Leu 580	tgg Trp 580	gat Asp 580	act Thr 580	act Thr 580	ctt Leu 585	gat Asp 585	gcc Ala 585	ctt Leu 585	gtc Val 585	att Ile 585	ggc Gly 585	1779
atc Ile 590	aat Asn 590	caa Gln 590	gtt Val 590	agc Ser 595	ttt Phe 595	tca Ser 595	ggg Gly 595	tgg Trp 595	aaa Lys 600	aca Thr 600	gat Asp 600	gaa Glu 600	tgt Cys 600	att Ile 600	gcc Ala 605	1827
ata Ile 610	ggg Gly 610	aat Asn 610	gag Glu 610	att Ile 610	ctt Leu 610	tcc Ser 615	tgg Trp 615	aag Lys 615	caa Gln 615	aaa Lys 615	ggg Gly 615	cta Leu 620	tct Ser 620	gaa Glu 620	agt Ser 620	1875
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aca Thr 640	ctg Leu 640	gac Asp 640	aga Arg 640	gca Ala 645	cgg Arg 645	aga Arg 645	tta Leu 645	acg Thr 645	gaa Glu 650	gag Glu 650	tac Tyr 650	tct Ser 650	gaa Glu 650	gca Ala 650	ctt Leu 650	1971
ctt Leu 655	tct Ser 655	ata Ile 655	ttc Phe 655	cct Pro 660	gaa Glu 660	aaa Lys 660	gta Val 660	atg Met 660	gtt Val 665	att Ile 665	ggg Gly 665	aaa Lys 665	gcc Ala 665	ctt Leu 665	gga Gly 665	2019
ata Ile 670	cca Pro 670	gat Asp 670	aac Asn 670	agt Ser 675	gtg Val 675	aga Arg 675	act Thr 675	tac Tyr 675	aca Thr 680	gag Glu 680	gca Ala 680	gaa Glu 680	att Ile 680	cgt Arg 680	gct Ala 685	2067

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att Ile	cga Arg	gaa Glu	gta Val 705	ctt Leu	gga Gly	tca Ser	act Thr	ggc Gly 710	tgg Trp	gat Asp	gtt Val	ctt Leu	gtt Val 715	cct Pro	gga Gly	2163
gtg Val	gcc Ala	cat His 720	gga Gly	act Thr	ctg Leu	atg Met	cgg Arg 725	gtg Val	gaa Glu	aga Arg	att Ile	ctt Leu 730	cct Pro	gga Gly	tca Ser	2211
tta Leu	cct Pro 735	tca Ser	tct Ser	gtc Val	aaa Lys	gaa Glu 740	cct Pro	gtg Val	gtt Val	cta Leu	att Ile 745	gta Val	gat Asp	aag Lys	gct Ala	2259
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cgt Arg	caa Gln	gag Glu	aat Asn 785	gtt Val	gta Val	ttt Phe	gta Val	act Thr 790	tgt Cys	gaa Glu	tat Tyr	gat Asp	gac Asp 795	aca Thr	gtt Val	2403
aca Thr	gat Asp	gtg Val 800	tat Tyr	ttg Leu	ctt Leu	gag Glu	gga Gly 805	aaa Lys	tat Tyr	atc Ile	aga Arg	tta Leu 810	gaa Glu	gca Ala	tca Ser	2451
tcc Ser	atc Ile 815	aat Asn	gtc Val	aat Asn	ctc Leu	tca Ser 820	ata Ile	gtt Val	tca Ser	gaa Glu	aaa Lys 825	aat Asn	gac Asp	aat Asn	gct Ala	2499
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caa Gln	aat Asn	gaa Glu	ttc Phe	tct Ser 850	cta Leu	cca Pro	tcg Ser	gat Asp	atc Ile 855	gag Glu	atg Met	cca Pro	ctg Leu	caa Gln 860	atg Met	2595
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cca Pro	ttt Phe	gga Gly	tca Ser	atg Met 930	gag Glu	gat Asp	gcg Ala	ctc Leu	aag Lys 935	aaa Lys	agt Ser	gga Gly	tca Ser	ctg Leu 940	gaa Glu	2835
tcc Ser	ttt Phe	aca Thr	agc Ser 945	ctt Leu	cta Leu	gaa Glu	aag Lys	att Ile 950	gaa Glu	aca Thr	gcc Ala	aaa Lys	gtc Val 955	gaa Glu	aat Asn	2883

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Leu	Ser	Pro	Pro	Glu	Glu	Thr	Ile	Ile	Phe	Leu	Lys	Arg	Ile	Phe	Pro		
		975				980					985						
cag	gat	gtc	cgg	ttg	att	ggt	aga	tct	agt	gct	aat	gtg	gag	gat	ttg		3027
Gln	Asp	Val	Arg	Leu	Ile	Val	Arg	Ser	Ser	Ala	Asn	Val	Glu	Asp	Leu		
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tgg	gct	tct	tta	tac	aca	agg	aga	gcc	atc	cta	agc	cgt	cga	gcc			3162
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Ala	Gly	Val	Tyr	Gln	Arg	Asp	Ala	Thr	Met	Ala	Val	Leu	Val	Gln			
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gaa	ata	ctg	cag	cca	gat	ctc	tcc	ttc	gtg	ctt	cat	act	gtt	tgc			3252
Glu	Ile	Leu	Gln	Pro	Asp	Leu	Ser	Phe	Val	Leu	His	Thr	Val	Cys			
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ccc	gct	gac	cat	gac	ccc	aag	ggt	gtc	cag	gct	gag	gtc	gcc	cct			3297
Pro	Ala	Asp	His	Asp	Pro	Lys	Val	Val	Gln	Ala	Glu	Val	Ala	Pro			
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Arg	Leu	Ser	Cys	Asn	Lys	Phe	Asp	Gly	Lys	Val	Ala	Thr	Leu	Ala			
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Phe	Ser	Asn	Phe	Ser	Glu	Glu	Met	Val	Val	His	Asn	Ser	Gly	Pro			
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gcc	aat	gga	gaa	gta	att	cgt	ctt	act	gtt	gat	tac	agc	aag	aag			3477
Ala	Asn	Gly	Glu	Val	Ile	Arg	Leu	Thr	Val	Asp	Tyr	Ser	Lys	Lys			
				1145					1150					1155			
cca	ttg	tcg	gtt	gat	aca	acc	ttt	agg	aag	cag	ttt	ggt	cag	cga			3522
Pro	Leu	Ser	Val	Asp	Thr	Thr	Phe	Arg	Lys	Gln	Phe	Gly	Gln	Arg			
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Leu	Ala	Ala	Ile	Gly	Gln	Tyr	Leu	Glu	Gln	Lys	Phe	Gly	Ser	Ala			
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Gln	Asp	Val	Glu	Gly	Cys	Leu	Val	Gly	Lys	Asp	Ile	Phe	Ile	Val			
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caa	agc	agg	cca	cag	cca	tag	aagccgaatt	c									3644
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				1205													

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<211> 1206

<212> PRT

<213> Oryza sativa

<400> 4

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Leu Leu Arg Arg Gly Ala Met Ala Leu Pro Gly Arg Arg Gly Phe Ala
 35 40 45

Cys Arg Gly Arg Ser Ala Ala Ser Ala Ala Glu Arg Thr Lys Glu Lys
 50 55 60

Lys Arg Arg Asp Ser Ser Lys Gln Pro Leu Val His Leu Gln Val Cys
 65 70 75 80

Leu Glu His Gln Val Lys Phe Gly Glu His Val Gly Ile Ile Gly Ser
 85 90 95

Thr Lys Glu Leu Gly Ser Trp Glu Glu Gln Val Glu Leu Glu Trp Thr
 100 105 110

Thr Asn Gly Trp Val Cys Gln Leu Lys Leu Pro Gly Glu Thr Leu Val
 115 120 125

Glu Phe Lys Phe Val Ile Phe Leu Val Gly Gly Lys Asp Lys Ile Trp
 130 135 140

Glu Asp Gly Asn Asn Arg Val Val Glu Leu Pro Lys Asp Gly Lys Phe
 145 150 155 160

Asp Ile Val Cys His Trp Asn Arg Thr Glu Glu Pro Leu Glu Leu Leu
 165 170 175

Gly Thr Pro Lys Phe Glu Leu Val Gly Glu Ala Glu Lys Asn Thr Gly
 180 185 190

Glu Asp Ala Ser Ala Ser Val Thr Phe Ala Pro Glu Lys Val Gln Asp
 195 200 205

Ile Ser Val Val Glu Asn Gly Asp Pro Ala Pro Glu Ala Glu Ser Ser
 210 215 220

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Lys Phe Gly Gly Gln Trp Gln Gly Ser Lys Thr Val Phe Met Arg Ser
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Asn Glu His Leu Asn Lys Glu Ala Asp Arg Met Trp Asp Thr Thr Gly
 245 250 255

Leu Asp Gly Ile Ala Leu Lys Leu Val Glu Gly Asp Lys Ala Ser Arg
 260 265 270

Asn Trp Trp Arg Lys Leu Glu Val Val Arg Gly Ile Leu Ser Glu Ser
 275 280 285

Phe Asp Asp Gln Ser Arg Leu Gly Ala Leu Val Tyr Ser Ala Ile Tyr
 290 295 300

Leu Lys Trp Ile Tyr Thr Gly Gln Ile Ser Cys Phe Glu Asp Gly Gly
 305 310 315 320

His His Arg Pro Asn Lys His Ala Glu Ile Ser Arg Gln Ile Phe Arg
 325 330 335

Glu Leu Glu Met Met Tyr Tyr Gly Lys Thr Thr Ser Ala Lys Asp Val
 340 345 350

Leu Val Ile Arg Lys Ile His Pro Phe Leu Pro Ser Phe Lys Ser Glu
 355 360 365

Phe Thr Ala Ser Val Pro Leu Thr Arg Ile Arg Asp Ile Ala His Arg
 370 375 380

Asn Asp Ile Pro His Asp Leu Lys Gln Glu Ile Lys His Thr Ile Gln
 385 390 395 400

Asn Lys Leu His Arg Asn Ala Gly Pro Glu Asp Leu Ile Ala Thr Glu
 405 410 415

Val Met Leu Ala Arg Ile Thr Lys Thr Pro Gly Glu Tyr Ser Glu Thr
 420 425 430

Phe Val Glu Gln Phe Thr Ile Phe Tyr Ser Glu Leu Lys Asp Phe Phe
 435 440 445

Asn Ala Gly Ser Leu Phe Glu Gln Leu Glu Ser Ile Lys Glu Ser Leu
 450 455 460

Asn Glu Ser Gly Leu Glu Val Leu Ser Ser Phe Val Glu Thr Lys Arg
 465 470 475 480

Ser Leu Asp Gln Val Asp His Ala Glu Asp Leu Asp Lys Asn Asp Thr
 485 490 495

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Ile Gln Ile Leu Met Thr Thr Leu Gln Ser Leu Ser Ser Leu Arg Ser
 500 505 510

Val Leu Met Lys Gly Leu Glu Ser Gly Leu Arg Asn Asp Ala Pro Asp
 515 520 525

Asn Ala Ile Ala Met Arg Gln Lys Trp Arg Leu Cys Glu Ile Ser Leu
 530 535 540

Glu Asp Tyr Ser Phe Val Leu Leu Ser Arg Phe Ile Asn Thr Leu Glu
 545 550 555 560

Ala Leu Gly Gly Ser Ala Ser Leu Ala Lys Asp Val Ala Arg Asn Thr
 565 570 575

Thr Leu Trp Asp Thr Thr Leu Asp Ala Leu Val Ile Gly Ile Asn Gln
 580 585 590

Val Ser Phe Ser Gly Trp Lys Thr Asp Glu Cys Ile Ala Ile Gly Asn
 595 600 605

Glu Ile Leu Ser Trp Lys Gln Lys Gly Leu Ser Glu Ser Glu Gly Cys
 610 615 620

Glu Asp Gly Lys Tyr Ile Trp Ser Leu Arg Leu Lys Ala Thr Leu Asp
 625 630 635 640

Arg Ala Arg Arg Leu Thr Glu Glu Tyr Ser Glu Ala Leu Leu Ser Ile
 645 650 655

Phe Pro Glu Lys Val Met Val Ile Gly Lys Ala Leu Gly Ile Pro Asp
 660 665 670

Asn Ser Val Arg Thr Tyr Thr Glu Ala Glu Ile Arg Ala Gly Ile Val
 675 680 685

Phe Gln Val Ser Lys Leu Cys Thr Val Leu Gln Lys Ala Ile Arg Glu
 690 695 700

Val Leu Gly Ser Thr Gly Trp Asp Val Leu Val Pro Gly Val Ala His
 705 710 715 720

Gly Thr Leu Met Arg Val Glu Arg Ile Leu Pro Gly Ser Leu Pro Ser
 725 730 735

Ser Val Lys Glu Pro Val Val Leu Ile Val Asp Lys Ala Asp Gly Asp
 740 745 750

Glu Glu Val Lys Ala Ala Gly Asp Asn Ile Val Gly Val Ile Leu Leu
 755 760 765

BCS 04-501-PCT_SEQUENZPROTOKOLL_Verfahren zur Identifizierung.ST25

Gln Glu Leu Pro His Leu Ser His Leu Gly Val Arg Ala Arg Gln Glu
 770 775 780
 Asn Val Val Phe Val Thr Cys Glu Tyr Asp Asp Thr Val Thr Asp Val
 785 790 795 800
 Tyr Leu Leu Glu Gly Lys Tyr Ile Arg Leu Glu Ala Ser Ser Ile Asn
 805 810 815
 Val Asn Leu Ser Ile Val Ser Glu Lys Asn Asp Asn Ala Val Ser Thr
 820 825 830
 Glu Pro Asn Ser Thr Gly Asn Pro Phe Gln Gln Lys Leu Gln Asn Glu
 835 840 845
 Phe Ser Leu Pro Ser Asp Ile Glu Met Pro Leu Gln Met Ser Lys Gln
 850 855 860
 Lys Ser Lys Ser Gly Val Asn Gly Ser Phe Ala Ala Leu Glu Leu Ser
 865 870 875 880
 Glu Ala Ser Val Glu Ser Ala Gly Ala Lys Ala Ala Ala Cys Arg Thr
 885 890 895
 Leu Ser Val Leu Ala Ser Leu Ser Asn Lys Val Tyr Ser Asp Gln Gly
 900 905 910
 Val Pro Ala Ala Phe Arg Val Pro Ser Gly Ala Val Ile Pro Phe Gly
 915 920 925
 Ser Met Glu Asp Ala Leu Lys Lys Ser Gly Ser Leu Glu Ser Phe Thr
 930 935 940
 Ser Leu Leu Glu Lys Ile Glu Thr Ala Lys Val Glu Asn Gly Glu Val
 945 950 955 960
 Asp Ser Leu Ala Leu Glu Leu Gln Ala Ile Ile Ser His Leu Ser Pro
 965 970 975
 Pro Glu Glu Thr Ile Ile Phe Leu Lys Arg Ile Phe Pro Gln Asp Val
 980 985 990
 Arg Leu Ile Val Arg Ser Ser Ala Asn Val Glu Asp Leu Ala Gly Met
 995 1000 1005
 Ser Ala Ala Gly Leu Tyr Asp Ser Ile Pro Asn Val Ser Leu Met
 1010 1015 1020
 Asp Pro Cys Ala Phe Gly Ala Ala Val Gly Lys Val Trp Ala Ser
 1025 1030 1035

BCS 04-501-PCT_SEQUENZPROTOKOLL_Verfahren zur Identifizierung.ST25

Leu Tyr Thr Arg Arg Ala Ile Leu Ser Arg Arg Ala Ala Gly Val
 1040 1045 1050
 Tyr Gln Arg Asp Ala Thr Met Ala Val Leu Val Gln Glu Ile Leu
 1055 1060 1065
 Gln Pro Asp Leu Ser Phe Val Leu His Thr Val Cys Pro Ala Asp
 1070 1075 1080
 His Asp Pro Lys Val Val Gln Ala Glu Val Ala Pro Gly Leu Gly
 1085 1090 1095
 Glu Thr Leu Ala Ser Gly Thr Arg Gly Thr Pro Trp Arg Leu Ser
 1100 1105 1110
 Cys Asn Lys Phe Asp Gly Lys Val Ala Thr Leu Ala Phe Ser Asn
 1115 1120 1125
 Phe Ser Glu Glu Met Val Val His Asn Ser Gly Pro Ala Asn Gly
 1130 1135 1140
 Glu Val Ile Arg Leu Thr Val Asp Tyr Ser Lys Lys Pro Leu Ser
 1145 1150 1155
 Val Asp Thr Thr Phe Arg Lys Gln Phe Gly Gln Arg Leu Ala Ala
 1160 1165 1170
 Ile Gly Gln Tyr Leu Glu Gln Lys Phe Gly Ser Ala Gln Asp Val
 1175 1180 1185
 Glu Gly Cys Leu Val Gly Lys Asp Ile Phe Ile Val Gln Ser Arg
 1190 1195 1200
 Pro Gln Pro
 1205

<210> 5

<211> 12

<212> PRT

<213> Oryza sativa, Arabidopsis thaliana, Sorghum bicolor

<400> 5

Leu Pro His Leu Ser His Leu Gly Val Arg Ala Arg
 1 5 10

<210> 6

<211> 7

BCS 04-501-PCT_SEQUENZPROTOKOLL_Verfahren zur Identifizierung.ST25

<212> PRT

<213> Hordeum vulgare

<400> 6

Ser Arg Arg Val Ala Gly Val
1 5

<210> 7

<211> 7

<212> PRT

<213> Hordeum vulgare

<400> 7

Val Glu Ala Glu Val Ala Pro
1 5

<210> 8

<211> 9

<212> PRT

<213> Hordeum vulgare

<400> 8

His Thr Val Ser Pro Ser Asp His Asp
1 5

<210> 9

<211> 807

<212> DNA

<213> Hordeum vulgare

<220>

<221> CDS

<222> (3)..(590)

<223>

<400> 9

cg gca cga gga gtc ctc ccc aat gtg agc ctc tcg gac cca acc aac
Ala Arg Gly Val Leu Pro Asn Val Ser Leu Ser Asp Pro Thr Asn

BCS 04-501-PCT_SEQUENZPROTOKOLL_Verfahren zur Identifizierung.ST25
 1 5 10 15

ttc	ggg	tct	gca	gta	gcg	cgg	gtc	tgg	gcc	tcg	ctg	tac	act	cgg	agg	95
Phe	Gly	Ser	Ala	Val	Ala	Arg	Val	Trp	Ala	Ser	Leu	Tyr	Thr	Arg	Arg	
				20					25					30		
gcc	atc	ctc	agc	cgc	cgg	gtg	gct	ggc	gtg	ccc	cag	agg	gac	gcc	aag	143
Ala	Ile	Leu	Ser	Arg	Arg	Val	Ala	Gly	Val	Pro	Gln	Arg	Asp	Ala	Lys	
			35					40					45			
atg	gct	gtc	ctg	gtg	cag	gag	atg	ctg	gag	cca	gag	cta	tcc	ttc	gtg	191
Met	Ala	Val	Leu	Val	Gln	Glu	Met	Leu	Glu	Pro	Glu	Leu	Ser	Phe	Val	
		50					55					60				
ctc	cac	acg	gtc	agc	ccc	tcg	gac	cac	gac	acc	agg	gtc	gtc	gag	gct	239
Leu	His	Thr	Val	Ser	Pro	Ser	Asp	His	Asp	Thr	Arg	Val	Val	Glu	Ala	
	65					70					75					
gag	gtt	gcc	ccg	ggg	ctg	ggc	gag	acc	ctt	gcc	gct	ggc	acc	cgc	ggc	287
Glu	Val	Ala	Pro	Gly	Leu	Gly	Glu	Thr	Leu	Ala	Ala	Gly	Thr	Arg	Gly	
80				85						90					95	
acc	ccg	tgg	cgt	ctc	tcc	tgc	gac	aag	ttc	gac	acc	gac	gtc	gcc	acc	335
Thr	Pro	Trp	Arg	Leu	Ser	Cys	Asp	Lys	Phe	Asp	Thr	Asp	Val	Ala	Thr	
				100					105					110		
ctg	gcc	ttc	gcc	aac	ttc	agt	gag	gag	atg	cgg	gtg	ctc	ggc	tcg	ggc	383
Leu	Ala	Phe	Ala	Asn	Phe	Ser	Glu	Glu	Met	Arg	Val	Leu	Gly	Ser	Gly	
			115					120					125			
ccc	gcc	gac	ggc	gag	gtg	gtg	agg	ctc	act	gtc	gac	tac	agc	acg	aag	431
Pro	Ala	Asp	Gly	Glu	Val	Val	Arg	Leu	Thr	Val	Asp	Tyr	Ser	Thr	Lys	
		130					135					140				
ctg	ctc	tcc	gtc	gac	agg	acc	ttc	agg	cag	aag	ttc	ggg	cag	cgg	ctg	479
Leu	Leu	Ser	Val	Asp	Arg	Thr	Phe	Arg	Gln	Lys	Phe	Gly	Gln	Arg	Leu	
	145					150					155					
gcc	gcc	gtg	ggg	cag	tac	ctg	gag	cag	agg	ttc	ggg	agc	gcc	cag	gac	527
Ala	Ala	Val	Gly	Gln	Tyr	Leu	Glu	Gln	Arg	Phe	Gly	Ser	Ala	Gln	Asp	
160					165					170					175	
gtg	gag	ggc	tgc	atg	gtc	tgg	gaa	gac	atc	tac	ata	gtg	cag	agc	atg	575
Val	Glu	Gly	Cys	Met	Val	Trp	Glu	Asp	Ile	Tyr	Ile	Val	Gln	Ser	Met	
				180					185					190		
cca	caa	ccg	ctg	tag	agtc	atccgt	aataatg	ttt	agatg	agcaa	agtttt	gggtt				630
Pro	Gln	Pro	Leu													
			195													
ggg	gaa	ataa	aat	ttg	ccga	aat	cccatg	g	caaa	ataag	tcag	gtatga	agag	ccc	gcc	690
tg	gaa	acca	act	gatt	cta	aata	atg	ttt	tga	att	cgtg	ttta	aattat	ggg	acgtg	750
caat	gatt	ttc	ctt	gga	atgc	att	gta	ag	tttt	taaaa	aaaaaaaa	aaaaaa				807

<210> 10

<211> 195

<212> PRT

<213> Hordeum vulgare

<400> 10

BCS 04-501-PCT_SEQUENZPROTOKOLL_Verfahren zur Identifizierung.ST25

Ala Arg Gly Val Leu Pro Asn Val Ser Leu Ser Asp Pro Thr Asn Phe
 1 5 10 15

Gly Ser Ala Val Ala Arg Val Trp Ala Ser Leu Tyr Thr Arg Arg Ala
 20 25 30

Ile Leu Ser Arg Arg Val Ala Gly Val Pro Gln Arg Asp Ala Lys Met
 35 40 45

Ala Val Leu Val Gln Glu Met Leu Glu Pro Glu Leu Ser Phe Val Leu
 50 55 60

His Thr Val Ser Pro Ser Asp His Asp Thr Arg Val Val Glu Ala Glu
 65 70 75 80

Val Ala Pro Gly Leu Gly Glu Thr Leu Ala Ala Gly Thr Arg Gly Thr
 85 90 95

Pro Trp Arg Leu Ser Cys Asp Lys Phe Asp Thr Asp Val Ala Thr Leu
 100 105 110

Ala Phe Ala Asn Phe Ser Glu Glu Met Arg Val Leu Gly Ser Gly Pro
 115 120 125

Ala Asp Gly Glu Val Val Arg Leu Thr Val Asp Tyr Ser Thr Lys Leu
 130 135 140

Leu Ser Val Asp Arg Thr Phe Arg Gln Lys Phe Gly Gln Arg Leu Ala
 145 150 155 160

Ala Val Gly Gln Tyr Leu Glu Gln Arg Phe Gly Ser Ala Gln Asp Val
 165 170 175

Glu Gly Cys Met Val Trp Glu Asp Ile Tyr Ile Val Gln Ser Met Pro
 180 185 190

Gln Pro Leu
 195

<210> 11

<211> 9

<212> PRT

<213> Solanum tuberosum

<400> 11

Pro Glu Glu Cys Lys Ala Val Gly Asn
 1 5

BCS 04-501-PCT_SEQUENZPROTOKOLL_Verfahren zur Identifizierung.ST25

<210> 12

<211> 7

<212> PRT

<213> Solanum tuberosum

<400> 12

Thr Glu Glu Tyr Ser Glu Thr
1 5

<210> 13

<211> 7

<212> PRT

<213> Solanum tuberosum

<400> 13

Arg Phe Val Asn Ala Val Glu
1 5

<210> 14

<211> 7

<212> PRT

<213> Solanum tuberosum

<400> 14

Glu Gly Ser Glu Asp Gly Lys
1 5

<210> 15

<211> 403

<212> DNA

<213> Solanum tuberosum

<220>

<221> CDS

<222> (1) .. (402)

<223>

BCS 04-501-PCT_SEQUENZPROTOKOLL_Verfahren zur Identifizierung.ST25

<400> 15
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 Ala Asp Ala Ser Ile Ala Met Arg Gln Lys Trp Arg Leu Cys Glu Ile
 1 5 10 15

ggg ctt gaa gac tat gca ttt gtt ctt ttg agc agg ttt gtg aat gca 96
 Gly Leu Glu Asp Tyr Ala Phe Val Leu Leu Ser Arg Phe Val Asn Ala
 20 25 30

gtt gaa gct cta ggc gga gct gat tgg ctt gca gag aat gta aca gtg 144
 Val Glu Ala Leu Gly Gly Ala Asp Trp Leu Ala Glu Asn Val Thr Val
 35 40 45

aaa aac att agt tct tgg aat gat cca att gga gca ctt aca gtt gga 192
 Lys Asn Ile Ser Ser Trp Asn Asp Pro Ile Gly Ala Leu Thr Val Gly
 50 55 60

atc caa cag cta ggt ata tct ggt tgg aag ccc gag gaa tgc aaa gct 240
 Ile Gln Gln Leu Gly Ile Ser Gly Trp Lys Pro Glu Glu Cys Lys Ala
 65 70 75 80

gtt gga aat gaa ctt ttg tca tgg aaa gaa agg ggt att tca gaa att 288
 Val Gly Asn Glu Leu Leu Ser Trp Lys Glu Arg Gly Ile Ser Glu Ile
 85 90 95

gaa ggc agc gaa gat ggt aag act ata tgg gca tta aga cta aaa gcg 336
 Glu Gly Ser Glu Asp Gly Lys Thr Ile Trp Ala Leu Arg Leu Lys Ala
 100 105 110

act ctt gat aga agt cga agg tta act gag gag tat tcc gag aca ctt 384
 Thr Leu Asp Arg Ser Arg Arg Leu Thr Glu Glu Tyr Ser Glu Thr Leu
 115 120 125

ctc caa ata ttc cct gaa a 403
 Leu Gln Ile Phe Pro Glu
 130

<210> 16

<211> 134

<212> PRT

<213> Solanum tuberosum

<400> 16

Ala Asp Ala Ser Ile Ala Met Arg Gln Lys Trp Arg Leu Cys Glu Ile
 1 5 10 15

Gly Leu Glu Asp Tyr Ala Phe Val Leu Leu Ser Arg Phe Val Asn Ala
 20 25 30

Val Glu Ala Leu Gly Gly Ala Asp Trp Leu Ala Glu Asn Val Thr Val
 35 40 45

Lys Asn Ile Ser Ser Trp Asn Asp Pro Ile Gly Ala Leu Thr Val Gly
 50 55 60

Ile Gln Gln Leu Gly Ile Ser Gly Trp Lys Pro Glu Glu Cys Lys Ala

65 BCS 04-501-PCT_SEQUENZPROTOKOLL_Verfahren zur Identifizierung.ST25
70 75 80

Val Gly Asn Glu Leu Leu Ser Trp Lys Glu Arg Gly Ile Ser Glu Ile
85 90 95

Glu Gly Ser Glu Asp Gly Lys Thr Ile Trp Ala Leu Arg Leu Lys Ala
100 105 110

Thr Leu Asp Arg Ser Arg Arg Leu Thr Glu Glu Tyr Ser Glu Thr Leu
115 120 125

Leu Gln Ile Phe Pro Glu
130

<210> 17

<211> 7

<212> PRT

<213> Sorghum bicolor

<400> 17

Asp Gly Gly His His Arg Pro
1 5

<210> 18

<211> 8

<212> PRT

<213> Sorghum bicolor

<400> 18

Asp Ala Pro Asp Ser Ala Ile Ala
1 5

<210> 19

<211> 9

<212> PRT

<213> Sorghum bicolor

<400> 19

Ile Pro Glu Asn Ser Val Arg Thr Tyr
1 5

<210> 20

BCS 04-501-PCT_SEQUENZPROTOKOLL_Verfahren zur Identifizierung.ST25

<211> 6

<212> PRT

<213> Sorghum bicolor

<400> 20

Val	Asn	Lys	Ala	Asp	Gly
1				5	

<210> 21

<211> 1526

<212> DNA

<213> sorghum bicolor

<220>

<221> CDS

<222> (2)..(1525)

<223>

<400> 21

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1	His	Glu	Ala	Glu	Tyr	Val	His	Asp	Gln	Ser	His	Leu	Glu	Ala	Leu	Thr	
				5						10					15		
tat	tct	gca	ata	tat	cta	aag	tgg	ata	tat	act	ggt	caa	ata	cca	tgc		97
Tyr	Ser	Ala	Ile	Tyr	Leu	Lys	Trp	Ile	Tyr	Thr	Gly	Gln	Ile	Pro	Cys		
			20					25					30				
ttt	gag	gat	ggt	ggt	cac	cat	cga	ccc	aat	aaa	cat	gct	gag	ata	tcc		145
Phe	Glu	Asp	Gly	Gly	His	His	Arg	Pro	Asn	Lys	His	Ala	Glu	Ile	Ser		
		35					40					45					
agg	caa	att	ttt	cgt	gaa	att	gaa	agg	ata	tac	tat	ggg	gaa	aac	aca		193
Arg	Gln	Ile	Phe	Arg	Glu	Ile	Glu	Arg	Ile	Tyr	Tyr	Gly	Glu	Asn	Thr		
	50					55					60						
tca	gct	cag	gat	ttg	ctt	gtg	ata	cgc	aag	att	cat	cct	tgt	cta	cct		241
Ser	Ala	Gln	Asp	Leu	Leu	Val	Ile	Arg	Lys	Ile	His	Pro	Cys	Leu	Pro		
65					70					75					80		
tca	ttt	aaa	tca	gaa	ttt	act	gcc	tct	gtt	cct	cta	aca	cga	att	cgt		289
Ser	Phe	Lys	Ser	Glu	Phe	Thr	Ala	Ser	Val	Pro	Leu	Thr	Arg	Ile	Arg		
				85					90					95			
gat	att	gct	cat	cgt	aat	gac	ata	cca	cat	gat	ctc	aag	caa	gaa	atc		337
Asp	Ile	Ala	His	Arg	Asn	Asp	Ile	Pro	His	Asp	Leu	Lys	Gln	Glu	Ile		
			100					105					110				
aag	cat	act	ata	caa	aac	aag	ctt	cac	cgg	aat	gcc	ggc	cct	gag	gat		385
Lys	His	Thr	Ile	Gln	Asn	Lys	Leu	His	Arg	Asn	Ala	Gly	Pro	Glu	Asp		
		115					120					125					

BCS 04-501-PCT_SEQUENZPROTOKOLL_Verfahren zur Identifizierung.ST25																	
ctt Leu	att Ile	gct Ala	act Thr	gaa Glu	gcc Ala	atg Met	ctt Leu	gct Ala	agg Arg	att Ile	act Thr	aag Lys	act Thr	cct Pro	gga Gly	433	
	130					135					140						
gag Glu	tac Tyr	agt Ser	gaa Glu	gct Ala	ttt Phe	gtt Val	gaa Glu	caa Gln	ttc Phe	aag Lys	acg Thr	ttt Phe	tat Tyr	agt Ser	gaa Glu	481	
145					150					155					160		
tta Leu	aaa Lys	gat Asp	ttc Phe	ttc Phe	aat Asn	gct Ala	ggc Gly	agc Ser	cta Leu	ctg Leu	gag Glu	caa Gln	gtg Val	caa Gln	tcc Ser	529	
				165					170					175			
atc Ile	gag Glu	caa Gln	tct Ser	ttg Leu	gat Asp	gag Glu	tct Ser	ggc Gly	tta Leu	gaa Glu	gct Ala	ctc Leu	tca Ser	tcc Ser	ttt Phe	577	
			180					185					190				
ctg Leu	aaa Lys	acc Thr	aaa Lys	aag Lys	aat Asn	tta Leu	gac Asp	caa Gln	ctg Leu	gaa Glu	gat Asp	gca Ala	aaa Lys	gat Asp	ttg Leu	625	
		195					200					205					
gat Asp	gaa Glu	aat Asn	ggt Gly	ggc Gly	gtt Val	caa Gln	gtt Val	ttg Leu	ttg Leu	aaa Lys	gcc Ala	ttg Leu	ctg Leu	tcg Ser	tta Leu	673	
	210					215					220						
tct Ser	tat Tyr	cta Leu	aga Arg	tca Ser	att Ile	cta Leu	atg Met	aag Lys	ggt Gly	ctg Leu	gaa Glu	agt Ser	ggc Gly	ctt Leu	aga Arg	721	
225					230					235					240		
aat Asn	gat Asp	gct Ala	cca Pro	gat Asp	agt Ser	gct Ala	att Ile	gca Ala	atg Met	cga Arg	caa Gln	aag Lys	tgg Trp	cgt Arg	ctt Leu	769	
				245				250						255			
tgt Cys	gag Glu	atc Ile	ggg Gly	ctt Leu	gaa Glu	gat Asp	tat Tyr	tcg Ser	ttt Phe	gta Val	ttg Leu	tta Leu	agt Ser	aga Arg	tac Tyr	817	
			260					265					270				
atc Ile	aat Asn	gct Ala	ctt Leu	gaa Glu	gct Ala	ttg Leu	ggt Gly	gga Gly	tca Ser	gct Ala	tca Ser	ctt Leu	gca Ala	gag Glu	ggt Gly	865	
		275					280					285					
ctt Leu	cct Pro	aca Thr	aat Asn	aca Thr	agt Ser	cta Leu	tgg Trp	gat Asp	gat Asp	gcc Ala	ctt Leu	gat Asp	gcc Ala	ctt Leu	gtc Val	913	
	290					295					300						
att Ile	ggc Gly	ata Ile	aat Asn	caa Gln	gtt Val	agc Ser	ttt Phe	tca Ser	gga Gly	tgg Trp	aaa Lys	cca Pro	aat Asn	gag Glu	tgt Cys	961	
305					310					315					320		
act Thr	gca Ala	ata Ile	gtg Val	aat Asn	gag Glu	ctt Leu	ctt Leu	tct Ser	tgg Trp	aag Lys	cag Gln	aaa Lys	ggt Gly	cta Leu	tct Ser	1009	
				325				330						335			
gaa Glu	ttt Phe	gaa Glu	ggc Gly	agt Ser	gag Glu	gat Asp	gga Gly	aag Lys	tat Tyr	att Ile	tgg Trp	gca Ala	ctg Leu	aga Arg	ctc Leu	1057	
			340					345					350				
aaa Lys	gcc Ala	act Thr	ctt Leu	gat Asp	aga Arg	tca Ser	cga Arg	aga Arg	cta Leu	aca Thr	gaa Glu	gaa Glu	tac Tyr	tct Ser	gaa Glu	1105	
		355					360					365					
gca Ala	ctt Leu	ctt Leu	tct Ser	ata Ile	ttt Phe	cct Pro	gaa Glu	aaa Lys	gtc Val	aag Lys	gtt Val	ctt Leu	ggg Gly	aaa Lys	gcc Ala	1153	
	370					375					380						
ctt Leu	gga Gly	ata Ile	cca Pro	gag Glu	aac Asn	agt Ser	gtg Val	aga Arg	aca Thr	tac Tyr	act Thr	gaa Glu	gct Ala	gaa Glu	att Ile	1201	
385					390					395						400	

BCS 04-501-PCT_SEQUENZPROTOKOLL_Verfahren zur Identifizierung.ST25

cgt	gct	ggt	gtt	att	ttt	cac	gtc	tcg	aaa	ctt	tgc	act	gta	ctt	tta		1249
Arg	Ala	Gly	Val	Ile	Phe	His	Val	Ser	Lys	Leu	Cys	Thr	Val	Leu	Leu		
				405					410					415			
aaa	gca	act	cga	gca	gtt	ctt	gga	tcg	tct	gtg	tgg	gat	gtt	ctt	gtt		1297
Lys	Ala	Thr	Arg	Ala	Val	Leu	Gly	Ser	Ser	Val	Trp	Asp	Val	Leu	Val		
			420					425					430				
cct	gga	gtg	gcc	cat	gga	gcc	ttg	ata	cag	gtt	gaa	aga	ata	gct	cct		1345
Pro	Gly	Val	Ala	His	Gly	Ala	Leu	Ile	Gln	Val	Glu	Arg	Ile	Ala	Pro		
			435				440					445					
gga	tca	ttg	cca	tca	tcc	atc	aaa	gaa	cct	gtc	gtg	cta	gtt	gta	aac		1393
Gly	Ser	Leu	Pro	Ser	Ser	Ile	Lys	Glu	Pro	Val	Val	Leu	Val	Val	Asn		
	450					455					460						
aag	gct	gat	gga	gat	gaa	gag	gtc	aaa	gct	gct	ggg	gat	aac	ata	gtg		1441
Lys	Ala	Asp	Gly	Asp	Glu	Glu	Val	Lys	Ala	Ala	Gly	Asp	Asn	Ile	Val		
	465				470					475					480		
ggt	gtt	att	ctt	cta	caa	gaa	tta	cct	cac	cta	tca	cat	ctt	ggt	gtt		1489
Gly	Val	Ile	Leu	Leu	Gln	Glu	Leu	Pro	His	Leu	Ser	His	Leu	Gly	Val		
				485					490					495			
aga	gct	cgt	caa	gag	aaa	gtt	gta	ttt	gta	act	tgc	g					1526
Arg	Ala	Arg	Gln	Glu	Lys	Val	Val	Phe	Val	Thr	Cys						
			500					505									

<210> 22

<211> 508

<212> PRT

<213> sorghum bicolor

<400> 22

His	Glu	Ala	Glu	Tyr	Val	His	Asp	Gln	Ser	His	Leu	Glu	Ala	Leu	Thr		
1				5					10					15			
Tyr	Ser	Ala	Ile	Tyr	Leu	Lys	Trp	Ile	Tyr	Thr	Gly	Gln	Ile	Pro	Cys		
			20					25					30				
Phe	Glu	Asp	Gly	Gly	His	His	Arg	Pro	Asn	Lys	His	Ala	Glu	Ile	Ser		
		35					40					45					
Arg	Gln	Ile	Phe	Arg	Glu	Ile	Glu	Arg	Ile	Tyr	Tyr	Gly	Glu	Asn	Thr		
	50					55				60							
Ser	Ala	Gln	Asp	Leu	Leu	Val	Ile	Arg	Lys	Ile	His	Pro	Cys	Leu	Pro		
	65			70					75					80			
Ser	Phe	Lys	Ser	Glu	Phe	Thr	Ala	Ser	Val	Pro	Leu	Thr	Arg	Ile	Arg		
			85						90					95			
Asp	Ile	Ala	His	Arg	Asn	Asp	Ile	Pro	His	Asp	Leu	Lys	Gln	Glu	Ile		
		100						105					110				

BCS 04-501-PCT_SEQUENZPROTOKOLL_Verfahren zur Identifizierung.ST25

Lys His Thr Ile Gln Asn Lys Leu His Arg Asn Ala Gly Pro Glu Asp
 115 120 125

Leu Ile Ala Thr Glu Ala Met Leu Ala Arg Ile Thr Lys Thr Pro Gly
 130 135 140

Glu Tyr Ser Glu Ala Phe Val Glu Gln Phe Lys Thr Phe Tyr Ser Glu
 145 150 155 160

Leu Lys Asp Phe Phe Asn Ala Gly Ser Leu Leu Glu Gln Val Gln Ser
 165 170 175

Ile Glu Gln Ser Leu Asp Glu Ser Gly Leu Glu Ala Leu Ser Ser Phe
 180 185 190

Leu Lys Thr Lys Lys Asn Leu Asp Gln Leu Glu Asp Ala Lys Asp Leu
 195 200 205

Asp Glu Asn Gly Gly Val Gln Val Leu Leu Lys Ala Leu Leu Ser Leu
 210 215 220

Ser Tyr Leu Arg Ser Ile Leu Met Lys Gly Leu Glu Ser Gly Leu Arg
 225 230 235 240

Asn Asp Ala Pro Asp Ser Ala Ile Ala Met Arg Gln Lys Trp Arg Leu
 245 250 255

Cys Glu Ile Gly Leu Glu Asp Tyr Ser Phe Val Leu Leu Ser Arg Tyr
 260 265 270

Ile Asn Ala Leu Glu Ala Leu Gly Gly Ser Ala Ser Leu Ala Glu Gly
 275 280 285

Leu Pro Thr Asn Thr Ser Leu Trp Asp Asp Ala Leu Asp Ala Leu Val
 290 295 300

Ile Gly Ile Asn Gln Val Ser Phe Ser Gly Trp Lys Pro Asn Glu Cys
 305 310 315 320

Thr Ala Ile Val Asn Glu Leu Leu Ser Trp Lys Gln Lys Gly Leu Ser
 325 330 335

Glu Phe Glu Gly Ser Glu Asp Gly Lys Tyr Ile Trp Ala Leu Arg Leu
 340 345 350

Lys Ala Thr Leu Asp Arg Ser Arg Arg Leu Thr Glu Glu Tyr Ser Glu
 355 360 365

Ala Leu Leu Ser Ile Phe Pro Glu Lys Val Lys Val Leu Gly Lys Ala
 370 375 380

BCS 04-501-PCT_SEQUENZPROTOKOLL_Verfahren zur Identifizierung.ST25

Leu Gly Ile Pro Glu Asn Ser Val Arg Thr Tyr Thr Glu Ala Glu Ile
 385 390 395 400

Arg Ala Gly Val Ile Phe His Val Ser Lys Leu Cys Thr Val Leu Leu
 405 410 415

Lys Ala Thr Arg Ala Val Leu Gly Ser Ser Val Trp Asp Val Leu Val
 420 425 430

Pro Gly Val Ala His Gly Ala Leu Ile Gln Val Glu Arg Ile Ala Pro
 435 440 445

Gly Ser Leu Pro Ser Ser Ile Lys Glu Pro Val Val Leu Val Val Asn
 450 455 460

Lys Ala Asp Gly Asp Glu Glu Val Lys Ala Ala Gly Asp Asn Ile Val
 465 470 475 480

Gly Val Ile Leu Leu Gln Glu Leu Pro His Leu Ser His Leu Gly Val
 485 490 495

Arg Ala Arg Gln Glu Lys Val Val Phe Val Thr Cys
 500 505

<210> 23

<211> 8

<212> PRT

<213> Triticum aestivum

<400> 23

Arg Asn Asp Ala Thr Asp Ala Gly
 1 5

<210> 24

<211> 8

<212> PRT

<213> Triticum aestivum

<400> 24

Gly Asn Thr Ser Val Trp Asp Asp
 1 5

<210> 25

<211> 509

BCS 04-501-PCT_SEQUENZPROTOKOLL_Verfahren zur Identifizierung.ST25

<212> DNA

<213> Triticum aestivum

<220>

<221> CDS

<222> (1)..(507)

<223>

<400> 25

aat	ggc	gct	ttt	gtc	gaa	caa	ttt	caa	ata	ttt	tat	agc	gaa	cta	aaa	48
Asn	Gly	Ala	Phe	Val	Glu	Gln	Phe	Gln	Ile	Phe	Tyr	Ser	Glu	Leu	Lys	
1				5					10					15		

gac	ttc	ttt	aat	gcc	ggc	agc	ctg	ttt	gaa	caa	ctg	gaa	tcc	atc	aag	96
Asp	Phe	Phe	Asn	Ala	Gly	Ser	Leu	Phe	Glu	Gln	Leu	Glu	Ser	Ile	Lys	
			20					25					30			

gaa	tct	ttg	aat	gat	tct	ggc	tta	gaa	gca	ctg	tca	tca	ttt	gtc	aaa	144
Glu	Ser	Leu	Asn	Asp	Ser	Gly	Leu	Glu	Ala	Leu	Ser	Ser	Phe	Val	Lys	
		35					40					45				

acc	aaa	cag	agt	ttg	gac	caa	gtg	gat	gct	gcg	aac	att	caa	ggt	gtg	192
Thr	Lys	Gln	Ser	Leu	Asp	Gln	Val	Asp	Ala	Ala	Asn	Ile	Gln	Val	Val	
	50					55					60					

atg	aag	acc	ttg	cag	tca	ttg	tct	tca	ttg	aga	tca	ggt	cta	atg	aag	240
Met	Lys	Thr	Leu	Gln	Ser	Leu	Ser	Ser	Leu	Arg	Ser	Val	Leu	Met	Lys	
65					70					75					80	

ggc	ctt	gaa	agt	ggc	ctt	aga	aat	gat	gcg	act	gat	gcc	ggt	ata	gca	288
Gly	Leu	Glu	Ser	Gly	Leu	Arg	Asn	Asp	Ala	Thr	Asp	Ala	Gly	Ile	Ala	
				85					90					95		

atg	cga	caa	aag	tgg	cgc	ctt	tgt	gag	att	ggt	ctt	gag	gat	tat	tct	336
Met	Arg	Gln	Lys	Trp	Arg	Leu	Cys	Glu	Ile	Gly	Leu	Glu	Asp	Tyr	Ser	
			100					105					110			

ttt	ggt	ttg	tta	agc	aga	tat	atc	aat	ggt	ctt	gaa	gct	tca	ggt	gga	384
Phe	Val	Leu	Leu	Ser	Arg	Tyr	Ile	Asn	Gly	Leu	Glu	Ala	Ser	Gly	Gly	
		115					120					125				

tca	gct	tca	ctt	gca	caa	tgt	gtg	gct	gga	aat	aca	agt	gta	tgg	gac	432
Ser	Ala	Ser	Leu	Ala	Gln	Cys	Val	Ala	Gly	Asn	Thr	Ser	Val	Trp	Asp	
	130					135					140					

gat	acc	ctt	gat	gcc	ctt	att	att	ggc	gtc	aat	caa	ggt	agc	ttt	tca	480
Asp	Thr	Leu	Asp	Ala	Leu	Ile	Ile	Gly	Val	Asn	Gln	Val	Ser	Phe	Ser	
145					150					155					160	

ggt	tgg	aag	cca	gag	gaa	tgc	att	gct	at							509
Gly	Trp	Lys	Pro	Glu	Glu	Cys	Ile	Ala								
				165												

<210> 26

<211> 169

<212> PRT

BCS 04-501-PCT_SEQUENZPROTOKOLL_Verfahren zur Identifizierung.ST25

<213> Triticum aestivum

<400> 26

Asn Gly Ala Phe Val Glu Gln Phe Gln Ile Phe Tyr Ser Glu Leu Lys
 1 5 10 15
 Asp Phe Phe Asn Ala Gly Ser Leu Phe Glu Gln Leu Glu Ser Ile Lys
 20 25 30
 Glu Ser Leu Asn Asp Ser Gly Leu Glu Ala Leu Ser Ser Phe Val Lys
 35 40 45
 Thr Lys Gln Ser Leu Asp Gln Val Asp Ala Ala Asn Ile Gln Val Val
 50 55 60
 Met Lys Thr Leu Gln Ser Leu Ser Ser Leu Arg Ser Val Leu Met Lys
 65 70 75 80
 Gly Leu Glu Ser Gly Leu Arg Asn Asp Ala Thr Asp Ala Gly Ile Ala
 85 90 95
 Met Arg Gln Lys Trp Arg Leu Cys Glu Ile Gly Leu Glu Asp Tyr Ser
 100 105 110
 Phe Val Leu Leu Ser Arg Tyr Ile Asn Gly Leu Glu Ala Ser Gly Gly
 115 120 125
 Ser Ala Ser Leu Ala Gln Cys Val Ala Gly Asn Thr Ser Val Trp Asp
 130 135 140
 Asp Thr Leu Asp Ala Leu Ile Ile Gly Val Asn Gln Val Ser Phe Ser
 145 150 155 160
 Gly Trp Lys Pro Glu Glu Cys Ile Ala
 165